HOWREY ATTORNEYS AT LAW

Serial No.: 09/682,540
Confirmation No.: 5619
Applicant: DANIELSSON, Mats
Atty. Ref.: 06730.0011.NPUS00

REMARKS:

REMARKS REGARDING CLAIMS AMENDMENTS:

The above noted amendments to the claims have been made so that the scope and language of the claims is more precise and clear in defining what the Applicant considers to be the invention. Specifically, the amendment to 15 has been made so that the preamble of the amended claim corresponds more closely with that of original claim 15. Further, claim 23 has been amended to incorporate all the limitations of independent claim 22 from which claim 23 was dependent. In accordance with the provisions of 35 U.S.C. §112, fourth paragraph, this amendment in no way narrows the scope of the protection encompassed by claim 23. the undersigned submits that no new matter is added as a result of the above amendments.

The claims and amended claims are submitted as being clearly distinct and patentable over the art of record and therefore their entry and allowance by the Examiner is requested.

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IN RESPONSE TO THE OFFICE ACTION:

FIRST REJECTION UNDER 35 U.S.C. § 102:

Claims 22, 23, 25 and 26 have been rejected under 35 U.S.C. §102 as allegedly being anticipated by U.S. Patent No. 4,694,399 issued to Siv. C. Tan et al. (the Tan reference). In response, Applicant requests that the Examiner reconsider and withdraw the rejection in view of the following:

For there to be anticipation under 35 U.S.C. §102, "each and every element" of the claimed invention must be found either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) and references cited therein. See also *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 1571, 230 USPQ 81, 84 (Fed. Cir. 1986) ("absence from the reference of any claimed element negates anticipation."); *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). As pointed out by the court, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed and that its existence was recognized by persons of ordinary skill in the field of the invention. *ATD Crop. V. Lydall, Inc.*, 159 F.3d 534, 545, 48 USPQ 2d 1321, 1328 (Fed. Cir. 1998). See also *In re Spada*, 911 F.2d 705, 708, 15 USPQ 2d 1655, 1657 (Fed. Cir. 1990).

In construing the terms of the claims under examination, the Examiner may apply the broadest reasonable meaning of the words in their ordinary usage, as they would be understood by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). However, claim terms are not to be read in a vacuum, and limitations are to be interpreted in light of the specification in giving them their 'broadest reasonable interpretation'. *In re Marosi*, 710 F.2d 799, 802, 218 USPQ 289, 292 (Fed. Cir. 1983) (emphasis in original). See also *In re Okuzawa*, 537 F.2d 545, 548, 190 USPQ 464, 466 (CCPA 1976). See also *Manual of Patent Examining Procedure*, 8th Ed. §2111. Thus the broadest reasonable

interpretation of the claims must be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999)

The Tan reference is generally directed to a process of tomodensitometric image reconstruction, which involves rotating a measuring assembly including an X-ray source and detector in the plane of a section to be imaged, such that the detector is operated within a certain zone so as to detect the non-absorbed X-rays, taking a predetermined number of views which include each constant pitch samples of N values representing the linear attenuation values produced by said detection means for a given angular position of said measuring assembly, the views being taken at a constant angular pitch, and subjecting said views to deconvolution and retroprojection to give an image. The detectors of the tomodensitometer are offset by $\Delta d/4$ (Δd being the pitch of the detectors. Reconstruction is performed during one complete revolution of the detector assembly, the linear absorption values being weighed by a coefficient α and an equivalent number of intermediary values being produced by summing each time two successive juxtaposed real values. The resulting sum is weighted by a coefficient $\beta/2$ prior to reconstructing the image on the basis of the data. As crudely shown in Figure 3, the multidetector 11 is fixed to a circuit board and rotated about a center point (O). Nowhere in the Tan reference is there any discussion or disclosure of the relative positions of the components of the multidetector.

In contrast the invention as recited in amended claim 23 is directed to an arrangement for detecting X-ray radiation that includes: a carrying member having detectors on a side thereof, said detectors including a plurality of sensors provided on a substrate upon which the detectors being arranged substantially edge-to-edge and side-by-side in at least one row on said side of carrying member. The detectors define a sensor plane that is substantially parallel to a surface of said carrying member. The carrying member is arranged so that the sensor plane is angularly oriented otherwise than perpendicular to incident X-ray beams. Further as is positively recited in the claims 23, at least two detectors are arranged in at least two levels that are displaced relative one to the other and such that an inactive section of at least one detector is overlapped with an active section of another detector. This is shown clearly in Figures 1 and 2 of the present application.

Applicant submits that nowhere in the Tan reference is there any teaching or suggestion that the multidetector, generally referred to in the Tan reference without specificity, include a plurality of sensors provided on a substrate upon which the detectors being arranged substantially edge-to-edge and side-by-side in at least one row on said side of carrying member. All that is shown in the Tan reference is a crude cross-sectional block representation of a multidetector. In contrast the present claim specifically calls for the elements to be arranged edge-to-edge and side-by-side. Thus Applicant submits that the present invention as recited in claim 23 is not anticipated by the Tan reference.

Applicant submits that nowhere in the Tan reference is there any teaching or suggestion that the multidetector, generally referred to in the Tan reference without specificity, include at least two detectors that are arranged in at least two levels that are displaced relative one to the other. Further nowhere in the Tan reference is there any teaching or suggestion to arrange the detectors such that an inactive section of at least one detector is overlapped with an active section of another detector. Thus Applicant submits that the present invention as recited in claim 23 is not anticipated by the Tan reference.

Further to the extent that claims 24-27 are dependent upon claim 23, under the provisions of 35 U.S.C. §112, 4th paragraph, all of the limitations of claim 23 are expressly and inherently recited in claims 24-27. Applicant submits that the above arguments are equally applicable to the rejection of claim 24-27 and therefore nothing in the Tan reference teaches or suggests the subject matter of claims 24-27.

In view of the above, Applicant requests the reconsideration and withdrawal of the rejection of claims 23-26 under 35 U.S.C. §102 and ask that the Examiner indicate the allowance of these claims in the next paper from the Office.

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HOWREY ATTORNEYS AT LAW

FIRST REJECTION UNDER 35 U.S.C. § 103:

Claims 24, 27-39 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable given U.S. Patent No. 4,694,399 issued to Siv C. Tan (the Tan reference).

Applicants request that the Examiner reconsider and withdraw the above rejection of the claims in view of the following:

A determination under 35 U.S.C.§103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. *In re Mayne*, 104 F.3d 1339, 1341, 41 USPQ 2d 1451, 1453 (Fed. Cir. 1997). An obviousness determination is based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966), see also *Robotic Vision Sys., Inc. v. View Eng'g Inc.*, 189 F.3d 1370, 1376, 51 USPQ 2d 1948, 1953 (Fed. Cir. 1999)

In line with this standard, case law provides that "the consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art." *In re Dow Chem.*, 837 F.2d 469, 473, 5 USPQ 2d 1529, 1531 (Fed. Cir. 1988). The first requirement is that a showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." *C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352, 48 USPQ 2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." *In re Dembiczak*, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1617. The second requirement is that the ultimate determination of obviousness must be based on a reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 903-904, 7 USPQ 2d 1673, 1681 (Fed. Cir. 1988); see also *In re Longi*, 759 F.2d 887, 897, 225 USPQ 645, 651-52 (Fed. Cir. 1985). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification

obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ 2d 1780, 1783–84 (Fed. Cir. 1992).

The examiner bears the burden of establishing a prima facie case of obviousness. *In re Deuel*, 51 F3d 1552, 1557, 34 USPQ 2d 1210, 1214 (Fed. Cir. 1995). The burden to rebut a rejection of obviousness does not arise until a prima facie case has been established. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ 2d 1955, 1957 (Fed. Cir. 1993). Only if the burden of establishing a prima facie case is met does the burden of coming forward with rebuttal argument or evidence shift to the applicant. *In re Deuel*, 51 F.3d 1552, 1553, 34 USPQ 2d 1210, 1214 (Fed. Cir. 1995), see also *Ex parte Obukowicz*, 27 USPQ 2d 1063, 1065 (B.P.A.I. 1992).

The Tan reference is generally directed to a process of tomodensitometric image reconstruction, which involves rotating a measuring assembly including an X-ray source and detector in the plane of a section to be imaged, such that the detector is operated within a certain zone so as to detect the non-absorbed X-rays, taking a predetermined number of views which include each constant pitch samples of N values representing the linear attenuation values produced by said detection means for a given angular position of said measuring assembly, the views being taken at a constant angular pitch, and subjecting said views to deconvolution and retroprojection to give an image. The detectors of the tomodensitometer are offset by $\Delta d/4$ (Δd being the pitch of the detectors. Reconstruction is performed during one complete revolution of the detector assembly, the linear absorption values being weighed by a coefficient α and an equivalent number of intermediary values being produced by summing each time two successive juxtaposed real values. The resulting sum is weighted by a coefficient $\beta/2$ prior to reconstructing the image on the basis of the data. As crudely shown in Figure 3, the multidetector 11 is fixed to a circuit board and rotated about a center point (O). Nowhere in the Tan reference is there any discussion or disclosure of the relative positions of the components of the multidetector.

Applicant submits that nowhere in the Tan reference is there any teaching or suggestion that the multidetector, generally referred to in the Tan reference without specificity, include a plurality of sensors provided on a substrate upon which the detectors being arranged substantially edge-to-edge and side-by-side in at least one row on said side of carrying member. All that is

shown in the Tan reference is a crude cross-sectional block representation of a multidetector. In contrast the limitation of independent claims 23, 28 and 36 specifically call for the elements to be arranged edge-to-edge and side-by-side. Thus Applicant submits that the present invention as recited in independent claims 23, 28 and 36 is not anticipated by the Tan reference.

Applicant submits that nowhere in the Tan reference is there any teaching or suggestion that the multidetector, generally referred to in the Tan reference without specificity, include at least two detectors that are arranged in at least two levels that are displaced relative one to the other. Further nowhere in the Tan reference is there any teaching or suggestion to arrange the detectors such that an inactive section of at least one detector is overlapped with an active section of another detector. . In contrast the limitation of independent claims 23, 28 and 36 specifically call for the elements to be arranged edge-to-edge and side-by-side. Thus Applicant submits that the present invention as recited in independent claims 23 is not obvious to one of skill in the art by the Tan reference.

Further to the extent that claims 24-27 are dependent upon claim 23, and claims 29-35 are dependent upon claim 28 and claims 37-39 are dependent upon claim 36, under the provisions of 35 U.S.C. §112, 4th paragraph, all of the limitations of the respective independent claim are expressly and inherently recited in these dependent claims. Thus Applicant submits that the above arguments are equally applicable to the rejection of claim 24-27, 29-35 and 37-39 and therefore nothing in the Tan reference teaches or suggests the subject matter of these claims.

Given the above, Applicant requests that the rejection of claims 24, 27-39 under 35 U.S.C. §103(a) be reconsidered and withdrawn and that the Examiner indicate the allowance of the claims in the next paper from the Office.

Th undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 08-3038, referencing Order No. 06730.0011.NPUS00.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner should directly contact the undersigned by phone to further the discussion.

Respectfully submitted,

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